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Veröffentlichungsversion / Published Version  
Zeitschriftenartikel / journal article

#### Empfohlene Zitierung / Suggested Citation:

Kunst, J. R., Dovidio, J. F., & Dotsch, R. (2017). White Look-Alikes: Mainstream Culture Adoption Makes Immigrants "Look" Phenotypically White. *Personality and Social Psychology Bulletin*, 1-18. <https://doi.org/10.1177/0146167217739279>

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# White Look-Alikes: Mainstream Culture Adoption Makes Immigrants “Look” Phenotypically White

Personality and Social  
Psychology Bulletin  
1–18

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DOI: 10.1177/0146167217739279  
pspb.sagepub.com



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## Abstract

White Americans generally equate “being American” with “being White.” In six studies, we demonstrate that White Americans perceive immigrants who adopt American mainstream culture as racially White and, reciprocally, perceive White-looking immigrants as assimilating more. In Studies 1 and 2, participants visually represented immigrants who adopted U.S. culture by acculturating to mainstream American culture or by holding a common or dual identity as more phenotypically White and less stereotypic in appearance. In Studies 3 and 4, these processes explained why participants were less likely to racially profile immigrants but also regarded them as less qualified for integration support. In Study 5, participants perceived light skin to fit to high U.S. culture adoption and dark skin to low U.S. culture adoption. Finally, in Study 6, light-skinned immigrants were seen as less threatening because they were perceived as assimilating more. Immigrants’ acculturation orientation and appearance interact and shape how they are evaluated.

## Keywords

acculturation, common identity, dual identity, integration support, multiculturalism, reverse correlation

Received June 7, 2017; revision accepted October 5, 2017

Generally, members of societal majority groups prefer that immigrants adopt the mainstream culture (Zagefka & Brown, 2002), often expecting them to assimilate (Dovidio, Gaertner, & Saguy, 2007)—that is, to give up their heritage culture while adopting the majority culture (Berry, 1997). As a consequence, across a range of intergroup contexts, majority-group members feel less threatened by (Scheepers, Saguy, Dovidio, & Gaertner, 2014), direct less bias toward (Kaiser & Pratt-Hyatt, 2009), and behave more prosocially with (Dovidio, Gaertner, Shnabel, Saguy, & Johnson, 2009) immigrants and minority-group members whose behaviors and social identity support an assimilation or colorblind ideology. These cognitive, motivational, and behavioral effects may also influence responses at a fundamental perceptual level. According to the dynamic-interactive model of social perception (Freeman & Ambady, 2011; Freeman & Johnson, 2016), individuals’ behavior can directly shape how they are visually represented and thereby affect the way they are treated (Blair, Judd, & Fallman, 2004; Eberhardt, Davies, Purdie-Vaughns, & Johnson, 2006). The present research thus investigated (a) whether immigrants’ adoption of the majority culture affects how White Americans mentally visualize them, and (b) the consequences of the way immigrants are visualized on how they are treated and perceived to acculturate.

How individuals and groups are visually represented can have profound effects on how they are evaluated and treated.

People have consensual visual prototypes of their own national groups and, consistent with the in-group projection model (Wenzel, Mummendey, & Waldzus, 2007), see this physical appearance as prototypical of superordinate, shared categories (Imhoff & Dotsch, 2013; Imhoff, Dotsch, Bianchi, Banse, & Wigboldus, 2011). For instance, in the context of the United States, White Americans often equate “being American” with “being White,” at least at an implicit level (Devos & Banaji, 2005). In terms of visual appearance, belonging to the White racial majority group is generally associated with a certain (lighter) skin tone and physiognomy (a more narrow nose, thinner lips, longer chins and sometimes larger vertical eye height compared with other ethnic groups; Maddox, 2004; Stepanova & Strube, 2009; Strom, Zebrowitz, Zhang, Bronstad, & Lee, 2012). Typically, individuals with such facial features are more likely to be perceived as racially White and are evaluated more positively (Dunham, Stepanova, Dotsch, & Todorov, 2015; Maddox,

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2004; Stepanova & Strube, 2009, 2012). Conversely, to the extent that people deviate from such a prototypical representation of a superordinate social category, they are likely to be stigmatized (Bianchi, Mummendey, Steffens, & Yzerbyt, 2010; Wenzel, Mummendey, Weber, & Walczus, 2003). Both skin tone and physiognomy can contribute independently to this effect and often operate without an individual's awareness of their influence. For instance, Hagiwara, Kashy, and Cesario (2012) found that White participants in the United States responded more negatively to African Americans who had more Afrocentric facial features and/or a darker skin tone.

Whereas the effects of acculturation orientations, physical appearance, and intergroup bias have often been studied separately, their effects may be systematically related and potentially bidirectional. The dynamic-interactive model of social perception (Freeman & Ambady, 2011; Freeman & Johnson, 2016) represents a comprehensive framework that incorporates both top-down influences of cognitive states and stereotype activations, and bottom-up effects of perceptual features on responses to individuals. Specifically, Freeman and Ambady (2011) proposed that "the perception of other people is accomplished by a dynamical system involving continuous interaction between social categories, stereotypes, high-level cognitive states, and the low-level processing of facial, vocal, and bodily cues" (p. 247). The present research focused on one key element of this model—the potential reciprocal relationship between higher order cognitive processes and basic perceptual responses to facial features, applying these insights to the specific context of responses to immigrants. Moreover, it extends work on the model by focusing on a key relational factor that is central to the way citizens of host countries (majority-group members) respond to immigrants representing a range of racial and ethnic groups internationally—that is, whether immigrants are motivated to assimilate to the host culture or maintain their own culture—rather than on group-specific stereotypes.

With respect to top-down influences on perception, to the extent that members of a nonprototypical group (e.g., non-White immigrants in the United States) are perceived to assimilate and adopt the culture of the superordinate group, they may be represented in ways similar to the in-group prototype—for example, in the United States, as visually more phenotypically White. In terms of bottom-up influences, portraying an immigrant as more phenotypically White could elicit perceptions that the immigrant is motivated to assimilate. Crucially, these potentially reciprocal processes could, in turn, have both positive and negative downstream consequences on the ways immigrants are evaluated and treated. Subtle biases in cultural portrayals of members of minority groups, for example as transmitted through popular media, can have significant, cascading effects on the attitudes of those exposed to these images (Weisbuch, Pauker, & Ambady, 2009). Hence, to the extent that an immigrant's adoption of the U.S. majority culture leads them to be perceived as more phenotypically White, on one hand, they may

be less of a target of racism but, on the other hand, be evaluated as less qualified for integration support (Dovidio, Gaertner, Ufkes, Saguy, & Pearson, 2016). Reciprocally, if looking phenotypically White signals a motivation to culturally assimilate, immigrants perceived as more phenotypically White may elicit less threat.

Integrating work on facial perception and acculturation ideologies, in six studies we tested potentially bidirectional influences in which adoption of mainstream American culture (vs. maintaining a different culture) can lead immigrants to appear phenotypically more White, while appearing more White can promote perceptions that the immigrants are adopting mainstream American culture to a greater degree. Importantly, we also tested the implications that these factors may have for how immigrants are evaluated and treated.

In Studies 1 and 2, we first tested how the perceived acculturation orientation and the physical appearance of immigrants influence each other using a data-driven reverse-correlation technique (Dotsch & Todorov, 2012). In the reverse-correlation tasks, participants repeatedly selected from two randomly varying facial images the one that had a specified quality (i.e., a certain acculturation orientation) to generate a face that best visually represented that characteristic. Specifically, we tested whether participants would have a White phenotypical representation of immigrants who adopt U.S. mainstream culture. To provide convergent validity for our framework, these first studies investigated the phenomenon of interest using two dominant perspectives on how minority-group members relate to their own and the majority-group culture, namely, acculturation psychology in Study 1 (Berry, 1997) and the common in-group identity model in Study 2 (Gaertner & Dovidio, 2000). In two additional studies, we used the visual portrayals of immigrants generated by participants in Studies 1 and 2 as stimuli. We examined whether the images that were produced and judged to be more "White" and less stereotypical in appearance of their racial (Asian, Study 1) or ethnic (Arab, Study 2) group would lead White Americans to racially profile the immigrants less (Study 3) but also to consider them as less qualified to benefit from integration support (Study 4).

As the first studies used a bottom-up, data-driven (reverse-correlation) approach with little *a priori* constraints for which traits would emerge to signify racial categorization, it theoretically allowed us to observe racial differences on a variety of dimensions, including physiognomy and skin tone. However, because the images used in reverse-correlation tasks are relatively artificial, in subsequent studies we used actual photographs of minority-group members as stimuli. We focused specifically on varying their skin tone because it is a major cue for racial perception (Dunham et al., 2015; Maddox, 2004; Stepanova & Strube, 2009) and can be readily manipulated without compromising the ecological validity of the stimuli. In Study 5, we presented participants with a series of faces described as representing Latino/Latina American immigrants. We manipulated independently (a)

the skin tone (relatively light or dark) of immigrants in a series of pictures, and (b) a description of each immigrant, which presented the person as adopting mainstream American culture to either a low or high degree. Participants then rated the “fit” between the immigrants’ picture and description. Finally, in Study 6, we manipulated the skin tone of individuals portrayed as Latino/Latina immigrants and tested whether White Americans would perceive those whose skin tone was lighter as less threatening because they perceived them as assimilating.

## Study 1

Study 1 tested whether White Americans would visually represent a Chinese immigrant who placed primary value on adopting American mainstream culture compared with one maintaining her Chinese heritage culture as more phenotypically White. To the extent that information that an immigrant is trying to assimilate to U.S. culture leads people (literally) to see them as more American, we hypothesized that the classification images (i.e., the aggregated picture chosen within condition) would resemble a White person more (and appear less stereotypically Chinese) when White American participants chose the image of the Chinese immigrant adopting U.S. culture compared with the one maintaining her heritage culture. We focus on the classification images generated within the conditions to test our predictions. Additional exploratory pixel analyses that identify the specific facial regions predictive of participants’ classification can be found in the supplementary online materials (SOM).

## Method

**Participants.** Modeled after previous work, different samples of participants were recruited in the reverse-correlation task and the subsequent rating task. Previous research (Dotsch & Todorov, 2012; Imhoff & Dotsch, 2013; Imhoff et al., 2011) reveals that typically 20 to 30 participants are needed per cell to produce consistent classification images when effect sizes are large. Hence, for the *reverse-correlation task*, we recruited 62 White Americans ( $M_{\text{age}} = 43.21$ ,  $SD_{\text{age}} = 13.16$ ; women = 56.5%) based on this estimate.

With respect to the *rating task*, power analysis using G\*Power 3.1.5 indicated that a sample size of 70 participants would afford 95% power to detect a large between-group effect ( $f^2 = .80$ ,  $\alpha = .05$ ), which has been reported in previous research (e.g., Imhoff, Woelki, Hanke, & Dotsch, 2013). Satisfying this criterion, we recruited an independent sample of 82 White Americans ( $M_{\text{age}} = 40.32$ ,  $SD_{\text{age}} = 13.38$ ; women = 56.1%) to rate the classification images produced in the reverse-correlation task.

For all six studies we conducted, participant recruitment on Amazon’s Mechanical Turk (MTurk) was limited to the United States, and participants were screened for their race. All measures and manipulations are disclosed, and no

participants were excluded. Materials and data are available upon request. The research was approved by the institutional review board (IRB) of the first author. The next sections explain the two-step testing procedure.

**Procedure.** In the *reverse-correlation task*, participants were randomly assigned to a *host culture adoption* or a *heritage culture maintenance* condition; in each condition, they completed a two-image forced choice reverse-correlation task (Dotsch & Todorov, 2012). This reverse-correlation approach taps participants’ mental representations of social categories. Based on a specified criterion (in this case immigrants’ acculturation orientation), participants were asked to select one of two different versions of a base image (in this case a human face). To create such different versions, random noise patterns (similar to white noise) were generated and then superimposed on the base image (see Figure 1). As each noise pattern is different, the resulting stimuli (i.e., the noisy versions of the base image) look slightly different.

Specifically, participants were told that they would see a series of pairs of Chinese immigrant faces. In the *host culture adoption* condition, they were instructed, “Which of the immigrants likely always does her best and goes to great lengths to adopt American mainstream culture?” and to always pick one of the two pictures. In the *heritage culture maintenance* condition, the corresponding instruction was, “Which of the immigrants likely always does her best and goes to great lengths to maintain her Chinese heritage culture?” In total, participants completed 300 such trials in randomized order.

When creating stimuli for this study using the *reicr* R package (Dotsch, 2016), random noise patterns were generated using the standard parameters (see SOM) and then superimposed on a base image. In the present study, we averaged three Chinese-looking female faces with three Caucasian-looking female faces to obtain a base image that looked Asian but still ensured some racial ambiguity when the noise was superimposed (see Figure 1; see SOM for details on the creation and validation of the base image).

In the *rating task*, participants from a separate sample were randomly assigned to rate one of the two classification images generated by the reverse-correlation task, completing the questions, “Please indicate the degree to which the individual looks Chinese” and “Please indicate the degree to which the individual looks White/Caucasian” (0 = *not at all* to 6 = *extremely*).

## Results

Classification images were created by calculating the average noise pattern within condition and applying it to the base image (see Figure 2). Supporting our predictions, the independent sample of participants rated the classification images of the immigrant who adopted American mainstream culture as more White and less Chinese compared with the image of





**Figure 1.** The reverse-correlation technique applies random noise and the corresponding negative (i.e., inverted) version of the noise to a base image.

Note. Example stimuli from Studies 1 (top) and 2 (bottom) are displayed.

the immigrant who maintained her heritage culture (see Table 1 and Figure 2).

## Discussion

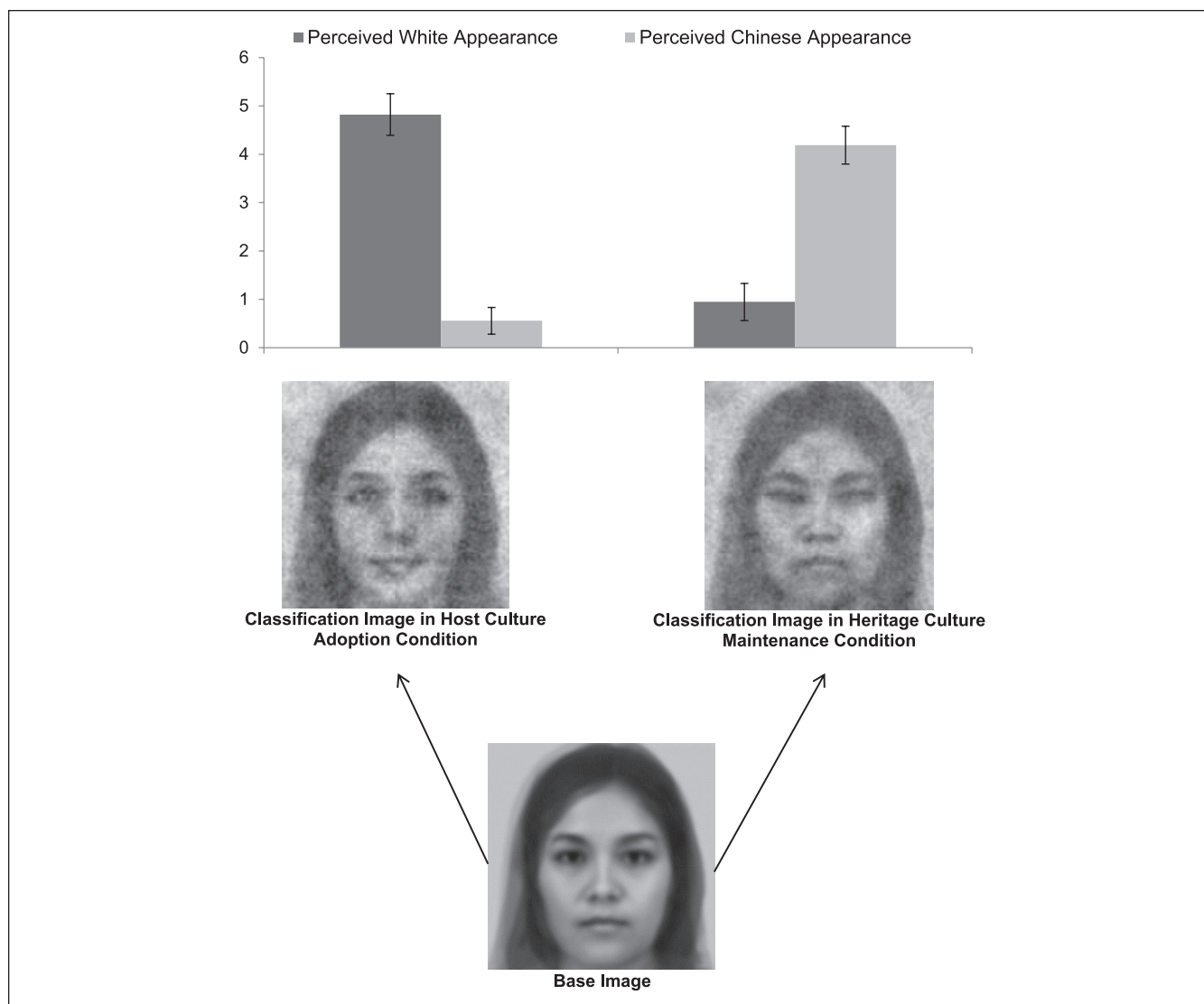
As predicted, participants visualized the appearance of the Chinese immigrant as more phenotypically White and less Chinese when she was presented as trying to adopt mainstream American culture than when described as trying to maintain her heritage culture. Although phenotypicality represents only one visual cue forming the basis for attributions of others, visual representations of members of racial and ethnic groups play a particularly important role in how people respond to them. For instance, African Americans who are perceived as having more Afrocentric features activate characteristics stereotypically associated with African Americans more strongly (Blair et al., 2004; Blair, Judd, Sadler, & Jenkins, 2002). This effect has critical social significance: In the United States, African Americans perceived to have more Afrocentric features are also more likely to receive the death penalty for capital offenses (Eberhardt et al., 2006). Theoretically, the present research provides further support for how social influences, in this case the

expressed acculturation orientation of immigrants, can systematically affect how they are visually represented (Freeman & Ambady, 2011; Freeman & Johnson, 2016), which ultimately can shape the way they are treated. We return to direct tests of such downstream consequences in Studies 3, 4, and 6.

Although Study 1 supported our general hypothesis, we note that we described the immigrant as either wanting to adopt mainstream American culture or to maintain her Chinese heritage culture. Hence, we cannot disentangle whether the difference in visual representations between conditions was due to the effect of the one or the other of the motivations, or both. To better identify the relative influence methodologically, we included a control condition in the next study.

## Study 2

We again used the reverse-correlation technique but this time with stimuli depicting Arab immigrant men. Theoretically, we also adopted a common in-group identity perspective (Gaertner & Dovidio, 2000) to investigate majority-group members' visual representations of immigrants with specific



**Figure 2.** The base and classification images and the ratings by an independent sample in Study 1 are displayed.

Note. Participants perceived the picture showing the Chinese immigrant who adopts American host culture as Whiter and less Chinese than the Chinese immigrant who maintained her heritage culture. Error bars represent 95% confidence intervals.

acculturation orientations within the identity domain, namely, common identity (i.e., identification with the majority culture only), separate identity (i.e., identification with the heritage culture only), and dual identity (i.e., identification with both cultures). The dual identity condition was especially crucial because it enabled us to test the relative influence of both cultural dimensions. That is, if majority culture adoption is the dominant dimension of influence, the dually identified immigrant would be expected to be represented as equally phenotypically White as the immigrant identifying only with the majority culture. By contrast, if the heritage culture maintenance dimension is of primary importance, the dual identity condition would be expected to produce visual images of Arabs similar to those in the separate identity condition.

## Method

**Participants.** Following the criteria of Study 1, 60 White Americans completed the *reverse-correlation task* ( $M_{age} = 40.83$ ,  $SD_{age} = 12.27$ ; women = 56.7%), and a separate sample of 112 White Americans ( $M_{age} = 33.02$ ,  $SD_{age} = 10.27$ ; women = 39.1%) completed the *rating task*.

**Procedure.** In the *reverse-correlation task*, participants were randomly assigned to one of three conditions and in each completed a task identical to Study 1, except for that we averaged three Arab-looking and three Caucasian-looking male faces to create a base image (see Figure 1; see SOM for details about the base image).

**Table 1.** Ratings of the Classification Images of Asian Immigrants Generated in Study 1 as a Function of the Immigrants' Preference for Host Culture Adoption or Heritage Culture Maintenance.

Dependent variable	Classification image from Study 1				<i>F</i>	<i>p</i>	<i>d</i> <sup>a</sup>
	Host culture adoption		Heritage culture maintenance				
	<i>M</i>	95% CI	<i>M</i>	95% CI			
Study 1							
Ratings of White appearance	5.82	[5.39, 6.25]	1.95	[1.56, 2.33]	176.27	<.001	2.97
Ratings of Asian appearance	1.56	[1.28, 1.83]	5.19	[4.80, 5.58]	247.13	<.001	3.44
Study 3							
Ratings of White appearance	7.85	[9.29, 8.41]	2.34	[1.91, 2.76]	202.62	<.001	1.45
Ratings of Asian appearance	2.90	[2.48, 3.32]	9.06	[8.50, 9.62]	346.08	<.001	1.90
Likelihood of interrogating	4.60	[3.99, 5.22]	7.52	[6.92, 8.12]	55.25	<.001	0.75
Study 4							
Ratings of White appearance	8.56	[8.03, 9.10]	2.45	[1.90, 2.99]	180.15	<.001	1.38
Ratings of Asian appearance	2.88	[2.39, 3.37]	9.77	[9.37, 10.19]	347.67	<.001	1.93
Qualifies for integration support	5.87	[5.19, 6.55]	8.94	[8.36, 9.51]	40.88	<.001	0.66

Note. CI = confidence interval.

<sup>a</sup>Cohen's *d* effect size is provided. Given the within-subjects design in Studies 3 and 4, the estimate is calculated controlling for the intercorrelation between the measures following Morris and DeShon (2002).

In the *common identity condition*, participants in each trial received the instruction, "Which of the immigrants is more likely to identify ONLY with being American and NOT with being Arab?" In the *separate identity condition*, participants received the instruction, "Which of the immigrants is more likely to identify ONLY with being Arab and NOT with being American?" In the *dual identity condition*, the instruction was as follows: "Which of the immigrants is more likely to identify BOTH with being Arab AND with being American?"

In the *rating task*, participants from the independent sample were randomly assigned to rate one of the three resulting classification images completing the items, "Please indicate the degree to which the individual looks Arab" and "Please indicate the degree to which the individual looks White/Caucasian," from 0 (*not at all*) to 6 (*extremely*).

## Results

Classification images were created for each condition (see Figure 3). ANOVAs showed that the independent sample rated the classification images generated in the common and dual identity conditions as having a less Arab and more White/Caucasian appearance than the image generated in the separate identity condition (see Table 2 and Figure 3). Bonferroni-corrected post hoc tests showed that these differences were all highly significant at  $ps \leq .001$ . No differences were observed between the dual and common identity conditions—Bonferroni-corrected  $ps > .999$ . The classification image from the separate identity condition was rated as more Arab than White,  $t(39) = -2.34$ ,  $p = .024$ ,  $d = .37$ .

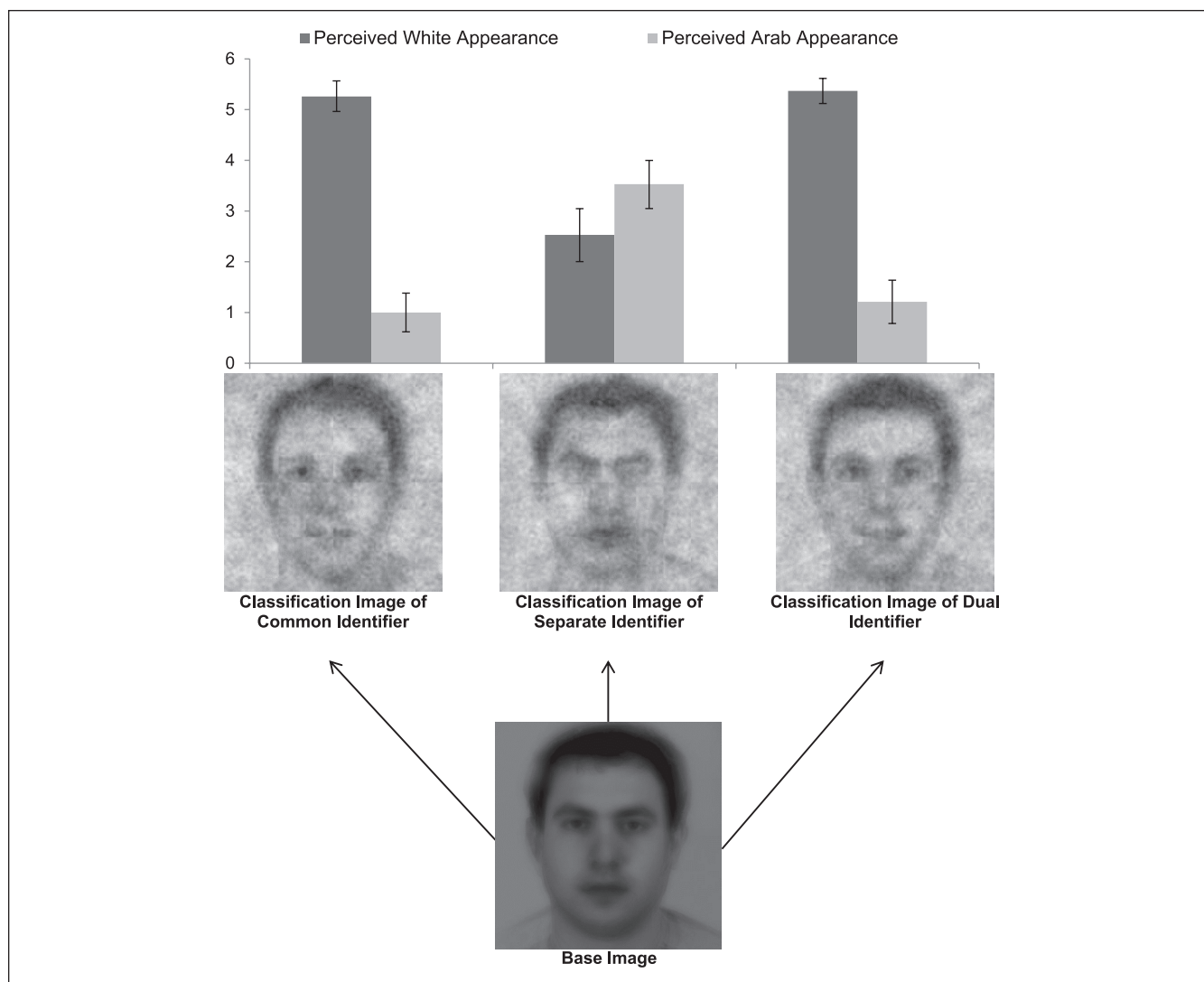
## Discussion

White American participants had an equally White visual representation of common and dually identified Arab immigrants, whereas they had a more stereotypical representation of an Arab who identified only with his heritage culture. This finding highlighted U.S. mainstream culture adoption as dominant force shaping majority-group members' visual representations.

Having demonstrated the robustness of our effects using both an acculturation and common in-group identity approach, in the next two studies we investigated whether the visual representations produced by White American participants of immigrants who do or do not attempt to adopt the mainstream majority culture are systematically associated with the treatment of these immigrants.

## Study 3

Factors that make members of another group appear more prototypic of their minority group, such as facial appearance (Eberhardt et al., 2006) or group identification (Kaiser & Pratt-Hyatt, 2009), can lead members of the socially dominant group to direct greater bias toward them. In this study, we investigated how bias may be culturally transmitted (see Weisbuch et al., 2009) to independent samples of White Americans by the different visual portrayals of immigrants generated by participants in Studies 1 and 2. We predicted that the classification images generated of a Chinese woman or an Arab man who primarily attempted to adopt U.S. culture as compared with maintaining her or his heritage culture



**Figure 3.** The base image, classification images, and the ratings by an independent sample in Study 2 are displayed.

Note. Participants perceived the picture showing the common- and dually identified Arab immigrant as Whiter and less Arab than the separately identified Arab immigrant. Error bars represent 95% confidence intervals.

would be targeted less for a form of racial profiling (see Glaser, 2014)—being selected for interrogation based on their group membership. Moreover, based on our hypothesized role of visual representation differences as a function of acculturation orientations, we further predicted that this relationship would be mediated by how phenotypically White or how Asian (for Study 1) or Arab (for Study 2) the individual in the classification images appeared to participants.

## Method

**Participants.** As we were uncertain of the effect size for the racial interrogation measure developed for this study, we assumed a small effect when conducting the power analysis. Results for this within-subjects design indicated that 94 participants provide a 95% chance to detect a small effect ( $f = .15$ ,  $\alpha = .05$ ; repeated-measurements  $r = .60$ ). Accordingly,

98 White Americans were recruited ( $M_{\text{age}} = 42.40$ ,  $SD_{\text{age}} = 13.04$ ; women = 50.0%).

**Procedure.** Participants were presented with images of Chinese women and Arab men (including the classification images produced in the first two studies) and to make judgments about them. They were informed that they would be presented with some situations and asked about their responses to each. There were two initial parts of the task, and all participants completed both in random order. One part involved responses to a situation regarding the images of Chinese women; the other part included images of Arab men.

In the part relating to Chinese women, participants were asked to “imagine that you work for an FBI section specialized in identifying foreign spies. You have been warned of spies working at a larger research university.” Then they were told that they would see a series of faces and to indicate



**Table 2.** Ratings of the Classification Images of Arab Immigrants Generated in Study 2 as a Function of the Immigrants' Cultural Identity Style.

Dependent variable	Classification image from Study 2									
	Common identifier			Dual identifier			Separate identifier			
	M	95% CI		M	95% CI		M	95% CI		
Study 2										
Ratings of White appearance	6.26	[5.96, 6.57]		6.37	[6.12, 6.62]		3.53	[3.00, 4.05]		
Ratings of Arab appearance	2.00	[1.62, 2.38]		2.21	[1.78, 2.64]		4.53	[4.05, 5.00]		
Study 3										
Ratings of White appearance	9.05	[8.56, 9.54]		9.02	[8.51, 9.53]		4.50	[3.94, 5.06]		
Ratings of Arab appearance	2.78	[2.37, 3.19]		2.85	[2.43, 3.27]		7.87	[7.32, 8.42]		
Likelihood of interrogating	4.16	[3.68, 4.65]		4.02	[3.53, 4.51]		8.16	[7.65, 8.67]		
Study 4										
Ratings of White appearance	9.20	[8.69, 9.72]		9.30	[8.84, 9.76]		4.30	[3.74, 4.85]		
Ratings of Arab appearance	2.47	[2.07, 2.87]		2.68	[2.26, 3.10]		8.00	[7.47, 8.53]		
Qualifies for integration support	4.94	[4.25, 5.63]		4.93	[4.21, 5.64]		8.10	[7.49, 8.71]		

Note. CI = confidence interval; ns = nonsignificant difference.

<sup>a</sup>As Mauchly's Test of Sphericity was significant for all measures in Studies 3 and 4, *F* tests are reported using Greenhouse–Geisser correction. Note that the use of none or a different correction did not change the pattern of results.

<sup>b</sup>Cohen's *d* for difference between common and dual identifier.

<sup>c</sup>Cohen's *d* for difference between common and separate identifier.

<sup>d</sup>Cohen's *d* for difference between dual and separate identifier. Given the within-subjects design in Studies 3 and 4, the Cohen's *d* estimate is calculated controlling for the intercorrelation between the measures following Morris and DeShon (2002) for these studies.

how likely they would be “to interrogate the following individuals especially thoroughly?” (1 = *not at all* to 11 = *extremely*). Each participant saw and rated the two classification images of Chinese women generated in the conditions in Study 1, which were of primary interest for this study, and four filler items which were Asian, noise-imposed faces taken from the stimuli used in that study. Following Brown-Iannuzzi, Dotsch, Cooley, and Payne (2016), these filler items were included to make the comparison of interest less salient.

In the part involving Arab men, participants were instructed to “imagine that you work as security at a public train station. You have been warned of a potential terrorist attack this day and that you should be on the lookout for suspicious-looking individuals.” For each image they would subsequently see, they rated the likelihood, on the same 11-point scale, “that you would stop and interrogate the traveler.” Three of the images of Arab males presented were those generated from the conditions in Study 2 (i.e., the classification images), plus four Arab male, noise-imposed filler images taken from the stimuli used in that study. Within both tasks, the order of the images was randomized.

In the final segment of the study, participants were in random order presented with two blocks, one showing the Asian and one showing the Arab images they had seen earlier. They rated from 1 (*not at all*) to 11 (*extremely*) how White/Caucasian and, depending on the set of images they came from, either how Asian or how Arab they looked.

## Results

**Ratings of classification images from Study 1.** Participants rated the individual shown in the classification image that was generated in the host culture adoption condition in Study 1 as more White and less Asian in appearance than the individual shown in the classification image generated in the heritage culture maintenance condition (see Table 1). As predicted, they also were less likely to interrogate the individual shown in the classification image generated in the host culture adoption condition (see Table 1). We used the MEMORE macro (Montoya & Hayes, 2017) to estimate a two-condition within-participant mediation model with host culture adoption versus heritage culture maintenance as the independent variable, likelihood of interrogating the person as the dependent variable, and perceived White/Caucasian and Asian appearance as mediators (see Figure 4). Perceived Asian appearance fully mediated the negative relationship between host culture adoption and racial profiling—bootstrapped indirect effect with 10,000 resamples:  $B = -2.21$ ,  $SE = 0.97$ , 95% confidence interval [CI] =  $[-4.06, -0.21]$ .

**Ratings of classification images from Study 2.** Participants rated the individuals shown in the classification images that were generated in the common and dual identity conditions of Study 2 as having a more White and less Arab appearance than the individual in the classification image that was

produced in the separate identity condition (see Table 2). As predicted, participants also were less likely to interrogate the individuals on the classification images from the common and dual identity conditions than the individual from the separate identity condition. For all measures, Bonferroni-corrected pairwise comparisons showed that the separate identity condition differed significantly from the other two conditions at  $ps < .001$ . The common and dual identity conditions did not differ on any measure,  $ps > .999$ , and were therefore averaged for further comparisons to the separate identity condition. Mediation analysis (see Figure 4), treating the (averaged) common/dual identity versus separate identity comparison as the independent variable, demonstrated that perceived Arab appearance partially mediated the negative relationship between the experimental condition and likelihood of interrogation—indirect effect:  $B = -2.08$ ,  $SE = 0.53$ , 95% CI =  $[-3.13, -1.01]$ .

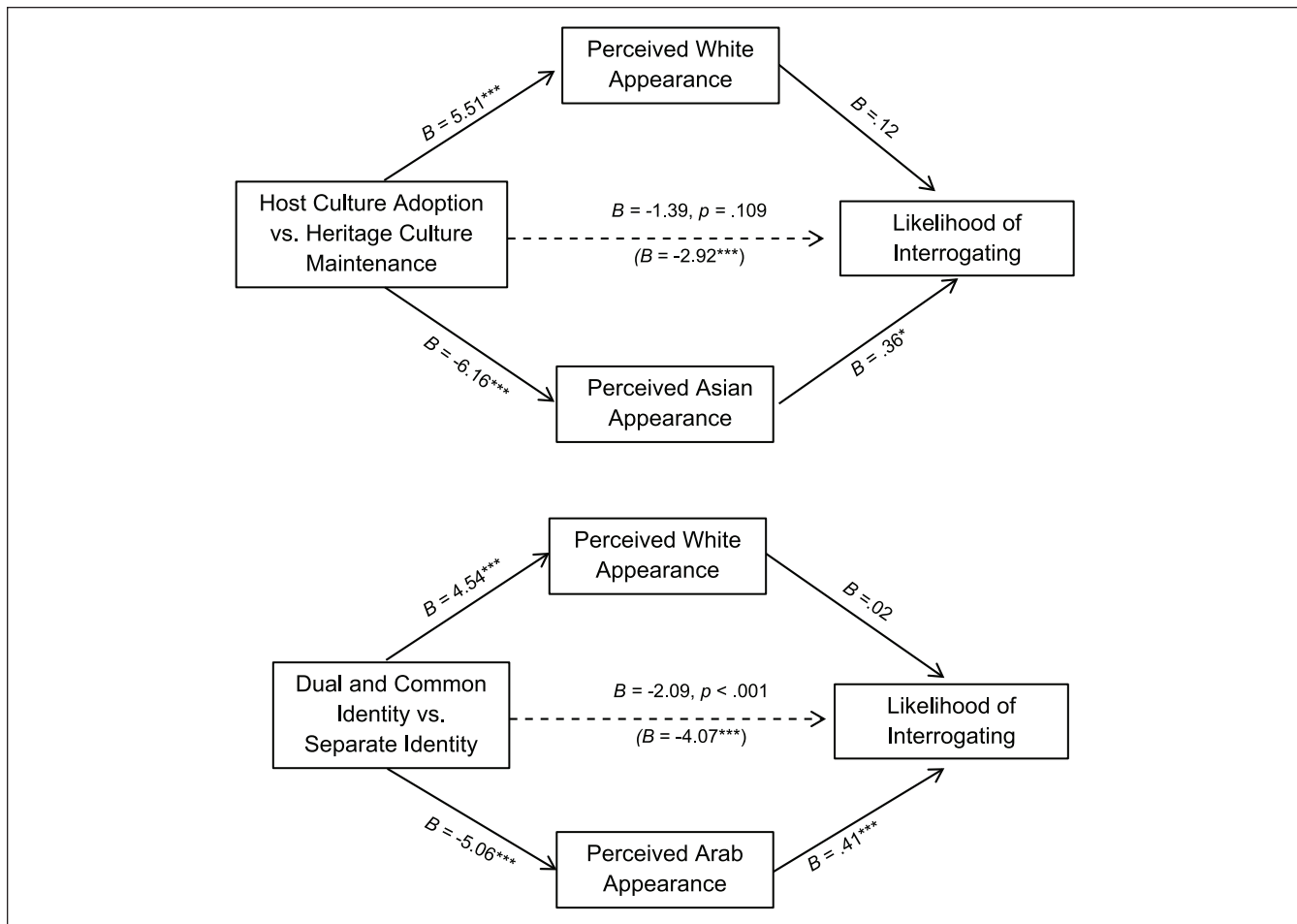
## Discussion

Results demonstrated a potential advantage that adoption of the majority culture can have for immigrants. The lesser the participants perceived them as looking like members of racial minority groups, the less likely participants were to racially profile them. We note, as illustrated in Figure 4, when the paths through perceived White appearance and perceived Asian (top panel) or perceived Arab (bottom panel) appearance were simultaneously tested, only the path through being perceived as less Asian or as less Arab was significant. One reason why the path through appearing Asian or Arab would be the primary path is that, in the United States, White is the cultural default (Devos & Banaji, 2005). As a consequence, nonprototypical characteristics, such as appearing Asian or Arab rather than appearing White, are likely to be particularly salient in social perception (Zarate & Smith, 1990). Being especially responsive to nonprototypical characteristics such as facial appearance, which may be diagnostic of being a member of another racial or ethnic group, may be particularly likely to occur in the context of immigration, in which immigrants often spontaneously arouse threats (Esses, Dovidio, Jackson, & Armstrong, 2001).

Although indication of a greater motivation to adopt the host culture may have the benefit for immigrants of eliciting less threat, thereby potentially deflecting discrimination, it also may reduce the perception that these immigrants are disadvantaged by social inequality. The next study tested this hypothesis.

## Study 4

It has been argued that by disregarding immigrants' racial group membership, they become “included but invisible” (Dovidio et al., 2016). Specifically, while perceiving immigrants as similar to the White majority group may be related to social inclusion—at least at a superficial level as the previous study demonstrated—at the same time it may perpetuate



**Figure 4.** Mediation models for Study 3 are displayed.

Note. The estimates in parentheses represent the direct effects before mediators were added to the model. Estimates are unstandardized.

Paths displayed in bold are significant:  $*p < .05$ .  $**p < .01$ .  $***p < .001$ .

social inequality by downplaying racial group differences. In this study, we aimed to demonstrate this relationship within our paradigm, again assessing the responses of an independent sample to visual representations generated by participants in Study 1 of a Chinese immigrant woman and in Study 2 of an Arab immigrant man, but with a different outcome measure. We predicted that the visual representation that majority-group members have of immigrants who adopt and identify with American mainstream culture as more White would be associated with perceiving these immigrants as less qualified for receiving integration support.

## Method

**Participants.** Following the sample-size criteria of Study 3, 94 White Americans ( $M_{\text{age}} = 41.10$ ,  $SD_{\text{age}} = 11.97$ ; women = 44.7%) were recruited.

**Procedure.** Similar to Study 3, participants were asked to rate Chinese women (classification images and noise-superimposed filler items from Study 1) and Arab men (classification

images and noise-superimposed filler items from Study 2) with respect to an integration support scenario. The same scenario was in random order presented once for the Chinese and once for the Arab images. Specifically, participants were asked to imagine being “part of a nonprofit organization granting free language courses, economic support, and integration courses to immigrants from ethnic and racial minorities” and to imagine that the individuals shown in each picture applied for this support. Next, they rated on 11-point scales (1 = *not at all* to 11 = *extremely*) how qualified they believed the individuals to be to receive the support. At the end, participants rated how White/Caucasian and how Asian (for images from Study 1) or Arab (for images from Study 2) the individuals looked using the exact same procedure as in Study 3.

## Results

**Ratings of classification images from Study 1.** As predicted, participants rated the individual shown in the classification image that was generated in the host culture adoption

condition in Study 1 as having a more White and less Asian appearance, and as being less qualified for integration support, than the individual shown in the image that was produced in the heritage culture maintenance condition (see Table 1). Mediation analyses (see Figure 5) demonstrated that perceived Asian appearance fully mediated the relationship between host culture adoption and integration support—indirect effect:  $B = -2.63$ ,  $SE = 1.68$ , 95% CI =  $[-6.64, -0.13]$ .

*Ratings of classification images from Study 2.* Similarly, the individuals shown in the classification images from the common and dual identity conditions from Study 2 were rated as having a more White and less Arab appearance, and to be less qualified for integration support than the individual shown in the classification image generated in the separate identity condition (see Table 2). Bonferroni-corrected pairwise comparisons showed that the common and dual identity conditions differed significantly from the separate identity condition on the measures at  $ps < .001$ , whereas the common and dual identity conditions did not differ on any measure,  $ps \geq .628$ . Mediation analyses showed that perceived Arab appearance fully mediated the relationship between common/dual identity (vs. separate identity) and integration support—indirect effect:  $B = -2.89$ ,  $SE = 0.88$ , 95% CI =  $[-4.60, -1.05]$  (see Figure 5).

## Discussion

The results demonstrated a possible downside that engaging in the mainstream majority culture can have for minority-group members. Whereas Study 3 showed that members of the dominant majority group may be less likely to display racism toward them, possibly because they mentally represent them as less prototypical of a racial minority group, they for the same reason also may regard them as less qualified for integration support. Hence, although our correlational mediation analyses cannot establish causality, these findings implicate a potential perceptual process that can lead minority-group members to become “included but invisible,” as previous research has suggested (Dovidio et al., 2016). Moreover, replicating the relationship we observed in Study 3, this association appeared to be driven primarily by being perceived as less Asian or less Arab, not by appearing more White. Thus, as in the previous study, a key factor in participants’ responses seemed to be the effect of host culture adoption on reducing perceptions of the stereotypic facial characteristics of Asian or Arab immigrants that are nonprototypic for the superordinate group. Yet, it is important to note that we only assessed racial perceptions as potential mediators. Given the cross-sectional nature of our data and the limited selection of mediators, it is still possible that other mediators such as racial stereotypes may have been at play.

Thus far, we have shown that White Americans mentally represent immigrants who adopt the majority culture

as phenotypically “Whiter” than those who maintain their heritage culture, and that this may have crucial implications for their evaluation. However, although the reverse-correlation method that we employed in Studies 1 through 4 has the advantage that it allows us to tap people’s visual representation of differently acculturated immigrants in a bottom-up manner with little a priori constraints and presumptions, the noise-imposed stimuli may appear somewhat artificial. Moreover, the relation between immigrants’ perceived appearance and their acculturation orientation observed in the previous studies is essentially correlational. As we tapped the visual representations of differently acculturated immigrants, it is uncertain whether participants used immigrants’ visual appearance to infer their acculturation or whether the latter guided their search for specific racial features. Hence, in the next study, we aimed to provide convergent evidence using a different procedure with actual images of minority-group members as stimuli and by experimentally varying their physical appearance and information about their acculturation orientation.

## Study 5

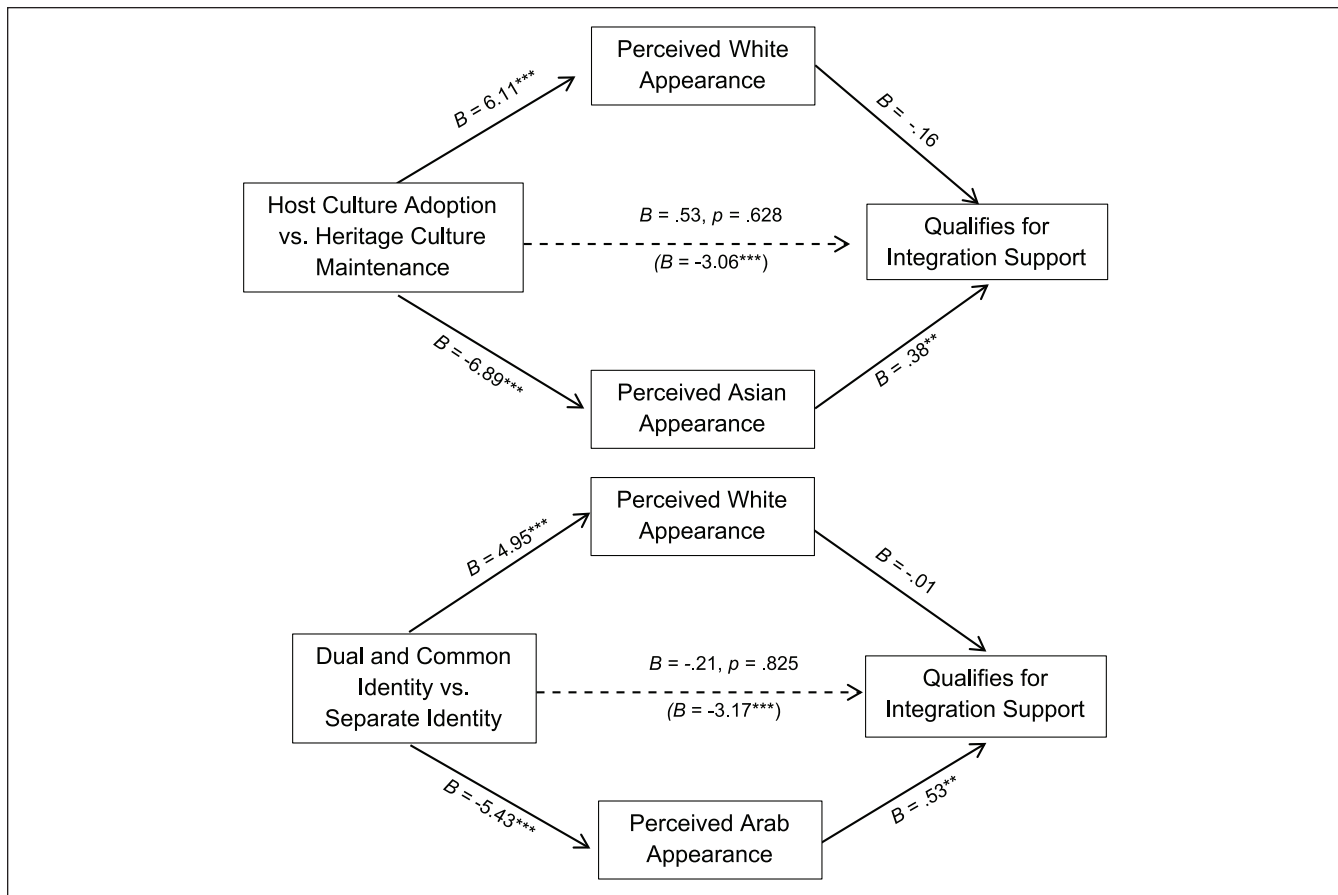
The present study had two goals. One was to test whether participants who evaluated immigrants with different acculturation orientations (high vs. low U.S. culture adoption) and physical appearance (dark vs. light skin tone) would perceive the greatest fit between light skin tone and high U.S. culture adoption, and between dark skin tone and low U.S. culture adoption. The second goal was to test whether immigrants’ skin tone and acculturation orientation would separately or in interaction predict the extent to which they would be perceived as visually looking “foreign,” a central cognitive representation influencing whether immigrants are perceived as majority in-group members (Mullen, Rozell, & Johnson, 2000).

To test these predictions, we conducted an experimental study with a mixed design. Participants were asked to rate the fit between a series of pictures of Latino and Latina immigrants who each time were experimentally described as either showing low or high adoption of U.S. culture and to have either dark or light skin. Moreover, participants rated how foreign each immigrant looked to them.

## Method

*Participants.* Power analyses for mixed designs with two within-subjects factors and their interaction are not straightforward and currently not supported by software such as G\*Power. Hence, we conducted a power analyses based on a repeated-measures ANOVA with a within-between factor interaction and oversampled the required sample size. This analysis showed that 56 participants were needed for a 95% chance to observe a small effect ( $f = .15$ ,  $\alpha = .05$ ). We oversampled this estimate, recruiting 111 White Americans ( $M_{age} = 35.58$ ,  $SD_{age} = 10.33$ ; women = 36.9%).





**Figure 5.** Mediation models for Study 4 are displayed.

Note. The estimates in parentheses represent the direct effects before mediators were added to the model. Unstandardized effects are presented. Paths displayed in bold are significant: \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Procedure.** At the beginning of the study, participants were informed that “immigration is a controversial issue,” and that it therefore is “important to understand how people perceive immigrants who live in the United States.” They were told that in the next section they would view a series of pictures of “immigrants living in the United States who approach American culture in different ways,” and that they would be asked to rate these individuals. Next, participants completed 20 trials. For each trial a picture of a Latin American woman or man (see SOM for details about the stimuli selection) was shown together with a description of the individual’s acculturation orientation. Half of the individuals shown in the pictures were women and the other half men. Crucially, we randomly manipulated the skin brightness of each individual presented in the pictures. Here, gamma correction in photo-editing software was used to create light and dark skin versions of each stimuli face picture. For each trial, participants saw either the light or the dark version of the individual (see SOM for the stimuli).

In addition to experimentally altering the skin tone of the target individual, we also randomly described each individual as adopting U.S. American culture to low or high degrees. In the *low U.S. culture adoption* condition, the individual

was described as follows: “This immigrant does *not* identify with the United States and has *not* adopted any American customs and traditions.” In the *high U.S. culture adoption* condition, the individual was described as follows: “This immigrant identifies *strongly* with the United States and *has* adopted most American customs and traditions.”

Thus, the study used a 2 (within: dark vs. light skin tone)  $\times$  2 (within: low vs. high U.S. culture adoption) within-subjects design. For each trial, participants were asked to rate “how foreign the individual looked” and “how good the picture fits to the description of the individual” on 7-point scales ranging from 0 (*not at all*) to 6 (*very much*).

## Results

As recommended for our design (Judd, Westfall, & Kenny, 2012), multilevel analyses were conducted in R using *lme4* and *lmerTest* to analyze the data. The Level 2 variables skin-tone and acculturation manipulations were added as fixed effects. Intercepts, and slopes were allowed to vary for participants. Moreover, intercepts were allowed to vary with respect to stimuli, to be able to generalize findings across

participants and stimuli (see SOM for the regression equations). Given the multilevel structure of the data, Cohen's  $d_r$  effect sizes were calculated dividing the mean differences by the residual standard deviation. Results supported our predictions. In terms of perceived fit between the picture and the acculturation orientation of the target, the skin-tone factor,  $t(110.73) = -3.08, p < .001, d_r = .18$ , the acculturation factor,  $t(108.95) = 5.30, p < .001, d_r = .62$ , and, crucially, the interaction between the skin-tone and acculturation factors,  $t(106.69) = 6.90, p < .001, d_r = .77$ , were significant (see Figure 6). The significant two-way interaction did not further interact with the targets' gender,  $p = .954$ .

An estimation and difference test of the marginal means showed that participants perceived the immigrant with light skin tone to fit better to a description of high U.S. culture adoption than to a description of low U.S. culture adoption,  $t(107.8) = -7.38, p < .001$ , 95% CI of the difference =  $[-1.54, -0.89]$ ,  $d_r = 1.01$  (see Figure 6). For dark-skinned targets, the degree of culture adoption did not significantly affect perceived fit,  $p = .066$ . Moreover, a comparison of the perceived fit of the dark- and light-skinned targets showed that participants found immigrants with light skin tone as fitting worse with the description of low U.S. culture adoption,  $t(96.5) = 6.43, p < .001$ , 95% CI of the difference =  $[0.47, 0.90]$ ,  $d_r = .57$ , but better with the description of high U.S. culture adoption,  $t(117.7) = -2.91, p = .004$ , 95% CI of the difference =  $[-0.43, -0.08]$ ,  $d_r = .21$ , than dark-skinned targets were perceived to fit.

In terms of perceived foreignness, the skin-tone factor,  $t(109.39) = -11.33, p < .001, d_r = .77$ , but not the acculturation orientation factor,  $p = .451$ , nor the interaction between both,  $p = .448$ , had significant effects. Participants perceived the light-skinned targets as less foreign looking,  $M = 3.30$ ,  $SE = 0.16$ , 95% CI =  $[2.98, 3.63]$ , than the dark-skinned targets,  $M = 4.21$ ,  $SE = 0.17$ , 95% CI =  $[3.88, 4.55]$ , 95% CI of the difference =  $[0.75, 1.07]$ .

## Discussion

The results of the fifth study provided further evidence for our working hypothesis using a different method. In support of our predictions, White American participants perceived light skin tone to fit better to immigrants described as adopting U.S. culture to large degrees. By contrast, they perceived immigrants with dark skin tone as fitting better with low U.S. culture adoption than immigrants with light skin tone. Moreover, participants perceived immigrants with light skin to look less foreign than those with dark skin, once more supporting that the social default for White Americans is to see light skin as prototypical for the U.S. American group.

Thus far, we have obtained convergent evidence for our general prediction that how immigrants' race and acculturation orientation are perceived interacts and shapes how they are evaluated. However, Studies 1 and 2 were essentially correlational, leaving open the question whether the

perceived acculturation orientation of immigrants predicts how they are perceived racially or vice versa. Study 5 showed that U.S. Americans perceived a description of high host culture adoption to fit better to immigrants when their skin tone was relatively light as compared with relatively dark. Building on these results, the final study tested whether—even in the absence of information about their acculturation orientation—systematically varying immigrants' appearance would influence the degree to which U.S. Americans assumed them to adopt U.S. culture and maintain their heritage culture.

## Study 6

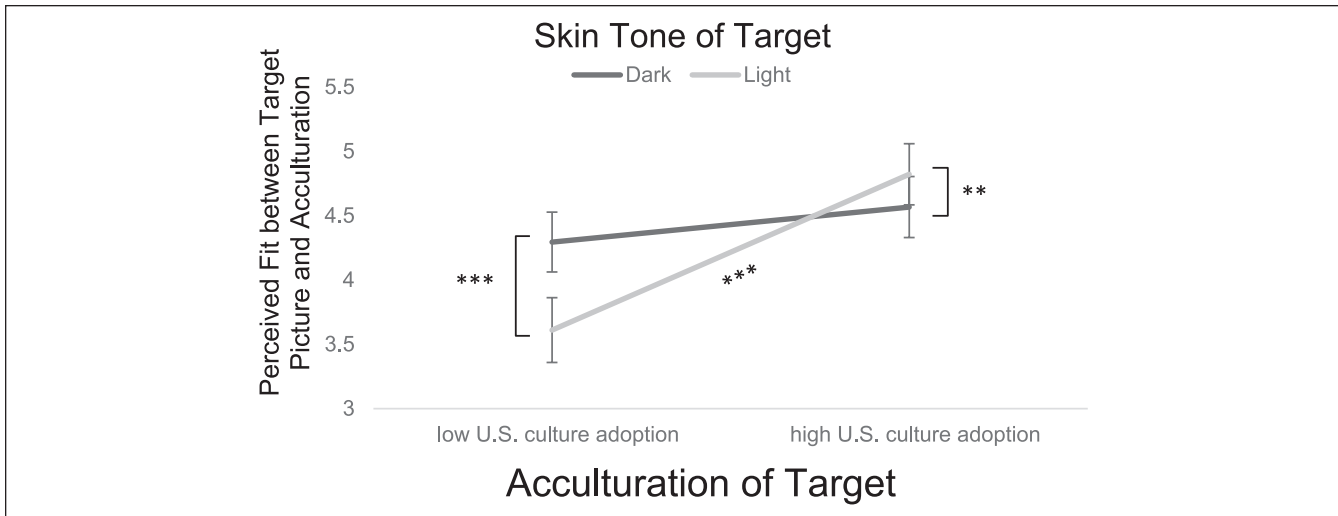
This last study tested whether the skin tone of immigrants would predict how assimilated White Americans think they are. We expected that immigrants with lighter skin tone would be perceived as adopting mainstream American culture more and maintaining their heritage culture less than immigrants with darker skin. Moreover, we expected this process to have important downstream consequences on how the immigrants would be evaluated. Immigrants who adopt the majority-group culture are often perceived as less threatening than those who maintain their heritage culture (Piontkowski, Rohmann, & Florack, 2002). Hence, in the present study, we expected White American participants to perceive immigrants with lighter skin as less of a threat and more of an enrichment to U.S. society precisely because they would be perceived as adopting U.S. culture more and as maintaining their heritage culture less.

To test these predictions, we presented participants with various trials depicting Latino/Latina immigrants with dark or light skin tone as in the previous study. However, instead of additionally altering their acculturation orientation, we asked participants to rate how much they thought the immigrants adopted U.S. culture and maintained their heritage culture. Moreover, we assessed how threatening and how enriching they perceived the immigrants to be to U.S. society.

## Method

**Participants.** We used the same power analysis and oversampling approach as in Study 4, with the difference that we in the present study only had one within-subject factor. Power analysis suggested that 36 participants were needed for a 95% chance to observe a small effect ( $f = .15, \alpha = .05$ ). We oversampled this estimate, recruiting 91 White Americans ( $M_{age} = 38.89, SD_{age} = 13.02$ ; women = 48.4%).

**Procedure.** As in the previous study, participants completed 20 trials, each time presenting a picture of an immigrant whose skin tone was manipulated to look light or dark. These stimuli pictures were the same as in the previous study. In contrast to the previous study, we did not alter the immigrants' acculturation orientation, but asked participants to



**Figure 6.** Simple slopes for Study 5 are displayed.

Note. Error bars represent 95% confidence intervals.

\*\*\* $p < .01$  (exact  $p = .004$ ). \*\*\* $p < .001$ .

rate it. Specifically, for each trial, participants, using 7-point scales ranging from 0 (*not at all*) to 6 (*very much*), responded to the questions, “To which extent do you think the individual adopts U.S. American culture?” and, “To which extent do you think the individual maintains his/her heritage culture?” Moreover, on the same scale, they rated the extent to which “the individual enriches U.S. society” and the extent to which “the individual is a threat to U.S. society.”

## Results

The same analytic approach as in Study 5 was used to estimate the main effects (see SOM for details). To test for multilevel mediation, we used the Monte Carlo macro for multilevel data provided and validated by Falk and Biesanz (2016) to obtain 95% CIs and  $p$  values for the indirect effects. The skin-tone factor had an effect on both mediators, perceived U.S. culture adoption,  $t(90.23) = 4.21$ ,  $p < .001$ ,  $d_r = .28$ , and perceived heritage culture maintenance,  $t(90.18) = -3.58$ ,  $p < .001$ ,  $d_r = .24$ . Moreover, it also had an effect on perceived threat,  $t(89.5) = -2.72$ ,  $p = .008$ ,  $d_r = .15$ , but not on perceived enrichment,  $p = .358$ . These effects were not moderated by target gender ( $ps > .421$ ). As displayed in Table 3, when the target immigrants’ skin was manipulated to be lighter, they were perceived as adopting U.S. culture more and to maintain their heritage culture less than when their skin was manipulated to look darker. Moreover, participants perceived the immigrants as less of a threat to society when their skin was light than when their skin was dark.

Given these effects, we set out to test a mediation model in which the perceived acculturation orientation mediated the effects of changing the immigrants’ skin tone from dark to light on perceived threat. In models controlling for the effect of the experimental manipulation, the proposed mediator

perceived U.S. culture adoption predicted less threat,  $B = -.31$ ,  $SE = 0.02$ ,  $t(1756.4) = -16.03$ ,  $p < .001$ , whereas perceived heritage culture maintenance predicted more threat,  $B = .07$ ,  $SE = 0.02$ ,  $t(1764) = 3.59$ ,  $p < .001$  (see Figure 7). As a consequence, changing the immigrants’ skin tone from dark to light indirectly led to less perceived threat mediated by higher perceived U.S. culture adoption,  $B = -.08$ , 95% CI =  $[-0.11, -0.04]$ ,  $p < .001$ , and lower perceived heritage culture maintenance,  $B = -.02$ , 95% CI =  $[-0.03, -0.01]$ ,  $p = .001$ .

Although the experimental manipulation had no direct effect on perceived enrichment, we tested whether it had indirect effects that were fully mediated by perceived acculturation. In models controlling for the experimental manipulation, perceived U.S. culture adoption predicted higher perceived enrichment,  $B = .34$ ,  $SE = 0.02$ ,  $t(1580.3) = 17.71$ ,  $p < .001$ , whereas perceived heritage culture maintenance predicted less enrichment,  $B = -.06$ ,  $SE = 0.02$ ,  $t(1785.6) = -3.00$ ,  $p = .003$ . As a result, changing the skin tone of the immigrants from dark to light led to higher perceived enrichment to U.S. society as mediated by higher perceived U.S. culture adoption,  $B = .08$ , 95% CI =  $[0.04, 0.12]$ ,  $p < .001$ , and lower perceived heritage culture maintenance,  $B = .01$ , 95% CI =  $[0.004, 0.03]$ ,  $p = .002$  (see Figure 7).

## Discussion

The results of this last study provided convergent evidence for the general framework established by the previous studies, showing that variations in immigrants’ skin tone are sufficient to influence how they are perceived to acculturate. Experimentally altering Latino and Latina immigrants to have a lighter skin tone led White American participants to perceive them as assimilating more to American mainstream culture, that is, adopting U.S.

**Table 3.** Perceived U.S. Culture Adoption, Heritage Culture Maintenance, Threat, and Enrichment to U.S. Society in Study 6 as a Function of the Immigrants' Skin Tone.

Dependent variable	Skin tone of immigrants				<i>p</i>	<i>d<sub>r</sub></i>
	Dark		Light			
	<i>M</i>	95% CI	<i>M</i>	95% CI		
Perceived U.S. culture adoption	3.99	[3.75, 4.23]	4.24	[4.02, 4.46]	<.001	.28
Perceived heritage culture maintenance	3.75	[3.50, 3.99]	3.53	[3.27, 3.79]	<.001	.24
Perceived threat to U.S. society	1.46	[1.18, 1.74]	1.34	[1.07, 1.61]	.008	.15
Perceived enrichment of U.S. society	3.92	[3.65, 4.18]	3.96	[3.71, 4.21]	.358	—

Note. Cohen's *d<sub>r</sub>* was calculated by dividing the mean difference by the residual standard deviation. CI = confidence interval.

culture more while maintaining their heritage culture less. This process may have important implications: As suggested by the correlational mediation analyses, perceptions that the immigrant is assimilating more may help account for why White Americans perceived lighter skinned immigrants as less threatening. As we compared only two conditions, light- versus dark-skinned immigrants, in this study we cannot definitively determine whether a light skin tone decreased threat, a dark skin tone increased threat, or a combination of both effects was operating. Nevertheless, these findings are consistent with the interpretation proposed in Studies 3 and 4 that the association between nonprototypical characteristics such as facial appearance and threat may account for why appearing more as a member of a racial or ethnic group other than White American may more strongly affect responses to the person than does appearing more White.

## General Discussion

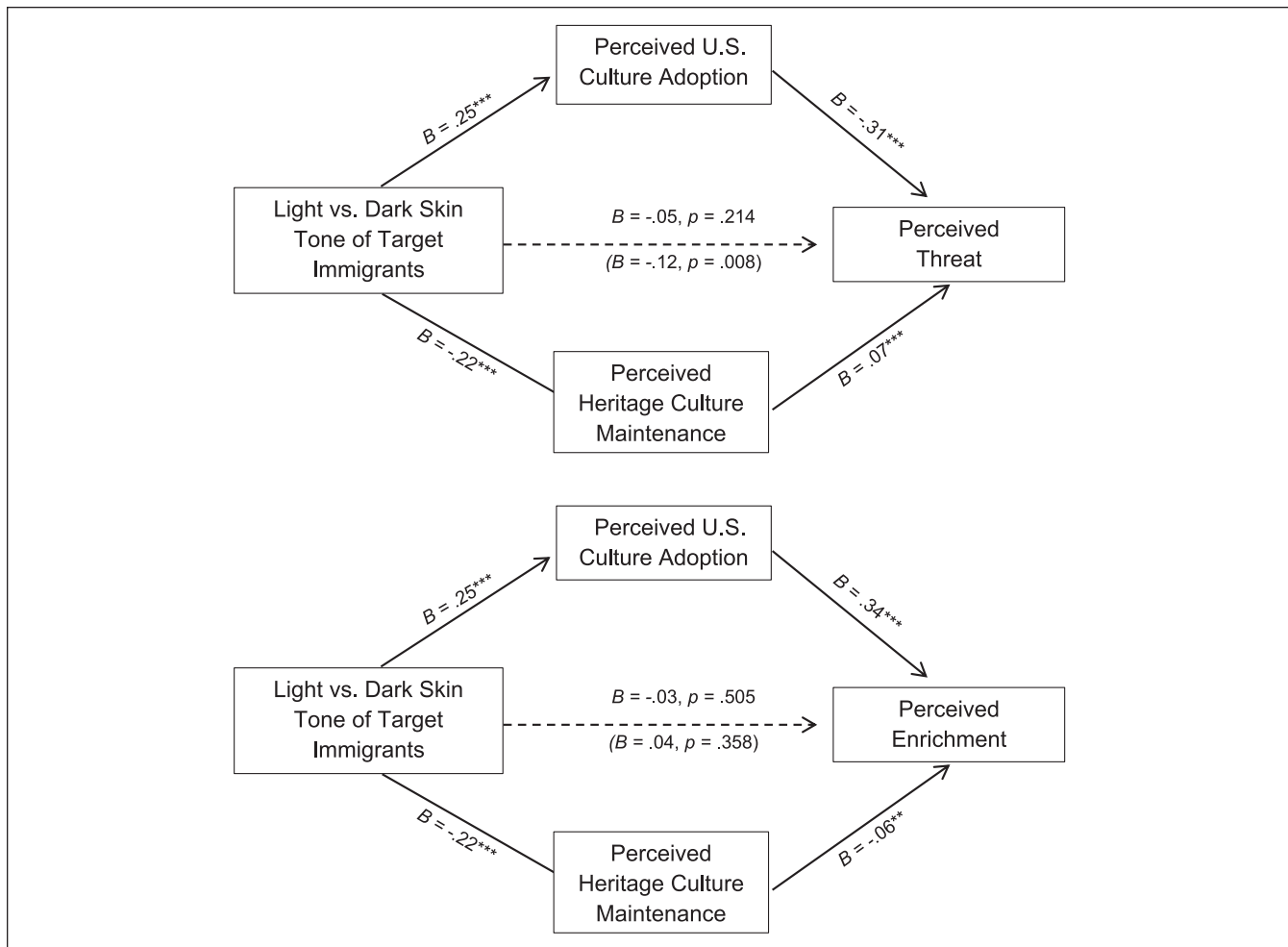
The converging results of six studies help integrate work on (a) acculturation orientations, (b) prototypical visual representations of members of different groups, and (c) the cultural transmission of bias. With respect to the first two issues, Studies 1 and 2 provided initial evidence that White Americans visually represent immigrants as more phenotypically White and less stereotypic of their racial minority groups when they are described as adopting the dominant U.S. culture or as identifying with it. Study 2 further revealed, supportive of the common in-group identity model (Gaertner & Dovidio, 2000), that this is due more to the belief that immigrants are trying to adopt U.S. culture than their desire to maintain their heritage culture: Information that the immigrant was attempting to adopt U.S. culture alone or as part of a dual identity (adopting U.S. culture while maintaining cultural heritage) produced visual representations that were equivalently phenotypically White, and significantly more so than when the immigrant was described as maintaining his or her cultural heritage only. Thus, learning that an immigrant aspires to adopt U.S. culture induces White Americans to perceive them as White also in racial terms.

Using a different experimental procedure, Study 5 provided convergent evidence for this notion, showing that White Americans found the description of a person adopting U.S. culture to large degrees to fit better to immigrants with light rather than dark skin. Hence, again participants seemed to associate adoption of U.S. culture with having a White appearance when it comes to immigrants.

Theoretically, these findings are consistent with the basic proposition of the dynamic-interactive model of social perception (Freeman & Johnson, 2016) that top-down cognitive influences and bottom-up effects of perceptual features influence basic social perception processes. However, whereas previous research on that model has focused on the activation of stereotypes of specific groups as a top-down influence, we elucidated how an intergroup relational factor—immigrants' expressed motivation to adopt the host culture or maintain their cultural heritage—can exert a general effect on responses to immigrants representing different racial or ethnic groups. Thus, the present research helps to integrate theoretical perspectives on basic perceptual and cognitive processes with work on acculturation and cultural processes. Moreover, our findings complement previous research on prototypical representations of Americans: Not only is being White associated with being American (Devos & Banaji, 2005) but also believing that someone wants to become "more American" leads them to be visualized as phenotypically more White.

The present work further illuminates how these different visual representations of immigrants, as a function of their acculturation orientation, can elicit systematic responses by members of the host culture. Independent samples of White American participants indicated that they would be less likely to interrogate a person who adopted mainstream American culture (Study 3). Analogously, immigrants manipulated to have lighter skin were perceived as less threatening because they were perceived to be more willing to assimilate to the majority-group culture (Study 6). At the same time, White Americans also believed that immigrants qualified less for integration support (Study 4) when judging the visual representation of immigrants trying to adopt U.S. culture produced in the first two studies. Thus, taken together, these findings demonstrate how perceptions of immigrants





**Figure 7.** The mediation models for Study 6 are displayed.

\*\* $p < .01$ . \*\*\* $p < .001$ .

who do or do not adopt the majority culture can have diverging effects. In this sense, the effects we observed may explain at a perceptual level how perceiving minority-group members as similar to the majority group can lead to social harmony but blur status differences between majority and minority groups, thereby distracting attention away from inequality (Dixon, Tropp, Durrheim, & Tredoux, 2010; Dovidio et al., 2007; Dovidio et al., 2016).

We note, however, that the results of Study 2 demonstrated that learning that an immigrant was attempting to adopt U.S. culture, rather than trying to maintain his heritage culture, primarily accounted for participants' visual representations of the immigrant (an Arab man). By contrast, the behavioral intentions displayed by participants in Studies 3 and 4 based on the images of an immigrant were mediated by participants' ratings of how Asian or Arab the person appeared, not by how White they were perceived to look. These findings suggest that both inclusionary processes (in developing the visual representations) and exclusionary processes (associated with sensitivity to another's appearance as

an out-group member) may shape immigrants' experiences and outcomes in complementary ways. Future research might further examine how the nature of the tasks involved (visual vs. interpretive) might relate to these different pathways and, given the limitations of correlational mediation analysis, also directly manipulate the proposed mediators (Spencer, Zanna, & Fong, 2005). In addition to modality, we note that participants in Studies 1, 2, and 5 were directly informed of the individual's intentions, and intentions toward the in-group may be particularly important (Brewer, 1999). However, participants in Studies 3, 4, and 6 were asked to make decisions based entirely on images of the immigrants, such that people may attend primarily to cues of difference in these contexts that emphasized *intergroup* relations (Mummendey & Wenzel, 1999).

Future research might also consider individual and cultural factors that may moderate the effects we observed. For instance, people who essentialize race more, believing it to be biologically determined (Keller, 2005; Williams & Eberhardt, 2008), or who live in cultures that define national

identity by heritage more than by ideology (Ditlmann, Purdie-Vaughns, & Eibach, 2011) may be less affected in their visual representation by immigrants' acculturation and identity. However, individuals who believe that group boundaries are malleable may be particularly influenced (Halperin, Russell, Trzesniewski, Gross, & Dweck, 2011).

In conclusion, our findings reveal how beliefs about immigrants' acculturation orientations can affect not only majority-group members' immediate responses to them (Zagefka & Brown, 2002) but also have broader social impact through the cultural transmission of visual images of the group. These visual images can profoundly but subtly influence impressions of individuals and groups in ways that people may not consciously recognize, and affect even those who do not hold explicit prejudice toward the group (Blair et al., 2004; Weisbuch et al., 2009).

### Acknowledgments

The authors thank the reviewers and the editor for very helpful comments and suggestions, and Janis Zickfeld for advice on the models tested in Studies 5 and 6.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was funded by University of Oslo stipends and the Norwegian Research Council (Grant 231157/F10).

### Supplemental Material

Supplementary material is available online with this article.

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